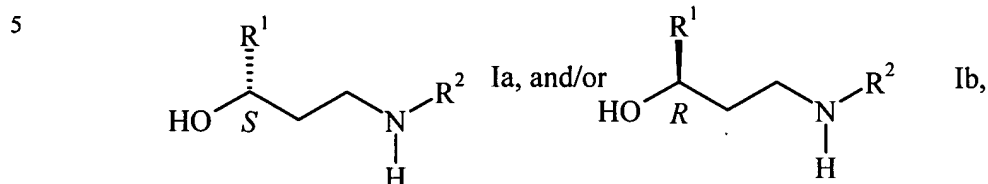


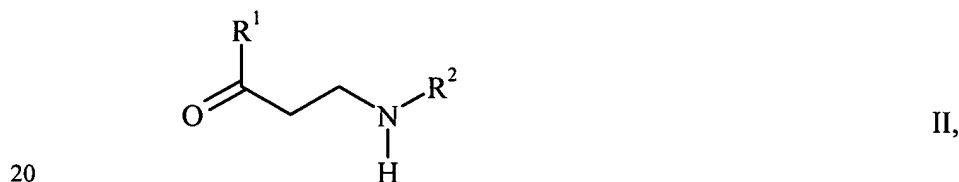
## Claims

1. A process for the preparation of salts of a carboxylic acid with an aminoalcohol of the formula



10 wherein  $\text{R}^1$  is selected from the group consisting of 2-thienyl, 2-furanyl and phenyl, each optionally substituted with one or more halogen atoms and/or one or more  $\text{C}_{1-4}$ -alkyl or  $\text{C}_{1-4}$ -alkoxy groups, and wherein  $\text{R}^2$  is  $\text{C}_{1-4}$ -alkyl or phenyl, each optionally substituted with one or more halogen atoms and/or one or more  $\text{C}_{1-4}$ -alkyl or  $\text{C}_{1-4}$ -alkoxy groups,

- 15 comprising asymmetrically hydrogenating a salt of a carboxylic acid with an aminoketone of the formula

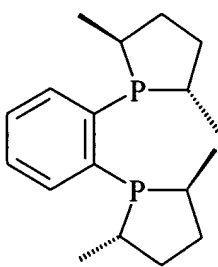


wherein  $\text{R}^1$  and  $\text{R}^2$  are as defined above, in the presence of a transition metal complex of a diphosphine ligand, preferably of an aryl- or biaryldiphosphine ligand.

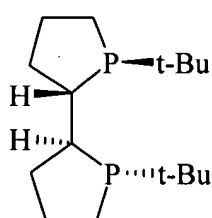
- 25 2. The process of claim 1, wherein the carboxylic acid is selected from the group consisting of optionally substituted  $\text{C}_{1-18}$ -alkanoic acids and optionally substituted mono- and bicyclic aromatic acids.
- 30 3. The process of claim 1 or 2, wherein  $\text{R}^1$  is 2-thienyl, optionally substituted with one or more halogen atoms, and  $\text{R}^2$  is methyl or ethyl.
4. The process of claim 3, wherein the compound of formula II is selected from the group consisting of (*S*)-(-)-3-*N*-methylamino-1-(2-thienyl)-1-propanol, (*S*)-(-)-3-*N*-methyl-

amino-1-(3-chloro-2-thienyl)-1-propanol, (*R*)-(+)-3-*N*-methylamino-1-(2-thienyl)-1-propanol and (*R*)-(+)-3-*N*-methylamino-1-(3-chloro-2-thienyl)-1-propanol.

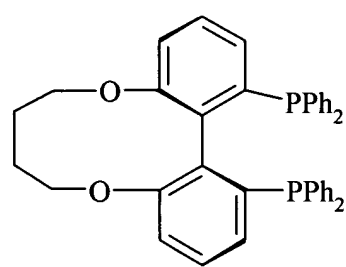
5. The process of any of claims 1 to 4, wherein the transition metal is selected from the group consisting of rhodium, ruthenium or iridium, preferably rhodium.
6. The process of any of claims 1 to 7, wherein the diphosphine ligand is selected from the group consisting of



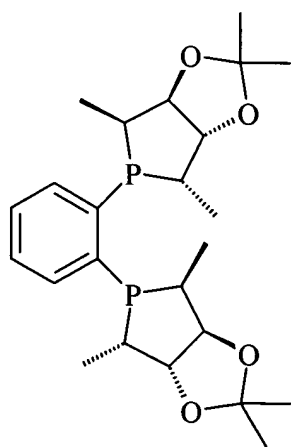
(*S,S*)-"Me-DuPhos",



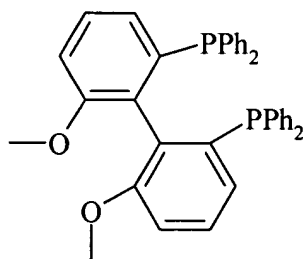
(*R,R,S,S*)-"TangPhos",



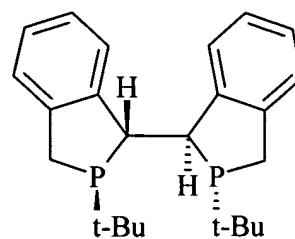
(*S*)-"C4-TunePhos",



(*S,S,S,S*)-"Me-KetalPhos",



(*S*) and (*R*)-"MeO-BiPhep" and "(*R<sub>P</sub>*,*R<sub>P</sub>*,*S<sub>C</sub>*,*S<sub>C</sub>*)-DuanPhos".



7. The process of any of claims 1 to 6, wherein the compounds of formulae Ia and Ib are obtained from their corresponding salts with a carboxylic acid by hydrolysis in the presence of an alkali- or earth alkali hydroxide.

8. Salts of a carboxylic acid with an aminoketone of the formula



wherein  $\text{R}^1$  is 2-thienyl or 2-furanyl, each optionally substituted with one or more halogen atoms and/or one or more  $\text{C}_{1-4}$ -alkyl or  $\text{C}_{1-4}$ -alkoxy groups, and wherein  $\text{R}^2$  is  $\text{C}_{1-4}$ -alkyl or phenyl, each optionally substituted with one or more halogen atoms and/or one or more  $\text{C}_{1-4}$ -alkyl or  $\text{C}_{1-4}$ -alkoxy groups.

9. The salts of claim 8, wherein the acid is selected from the group consisting of  $\text{C}_{1-18}$ -alkanoic acids, (-)-2,3:4,6-di-*O*-isopropylidene-2-keto-L-gulonic acid, (+)-2,3:4,6-di-*O*-isopropylidene-2-keto-D-gulonic acid, 2-keto-L-gulonic acid, 2-keto-D-gulonic acid, L-aspartic acid, D-aspartic acid, DL-aspartic acid, benzoic acid, 3-methyl-benzoic acid, salicylic acid and 1-, or 2-naphthalenecarboxylic acid.

10. Salts of a carboxylic acid with an aminoalkohol of the formula



wherein  $\text{R}^1$  is 2-furanyl or phenyl, each optionally substituted with one or more halogen atoms and/or one or more  $\text{C}_{1-4}$ -alkyl or  $\text{C}_{1-4}$ -alkoxy groups, and wherein  $\text{R}^2$  is  $\text{C}_{1-4}$ -alkyl or phenyl, each optionally substituted with one or more halogen atoms and/or one or more  $\text{C}_{1-4}$ -alkyl or  $\text{C}_{1-4}$ -alkoxy groups, with the exception of salts, wherein the acid is (-)-2,3:4,6-di-*O*-isopropylidene-2-keto-L-gulonic acid or (+)-2,3:4,6-di-*O*-isopropylidene-2-keto-D-gulonic acid.